REMARKS

This amendment is being filed in response to the Office Action mailed November 2, 2007. Claims 18-24 and 30-39 have been canceled herein without prejudice. Claims 1-17 and 25-29 were previously canceled. New claims 40-61 have been added. No new matter has been added to the application. With this amendment, claims 40-61 are pending in the application.

I. Power of attorney documents

New power of attorney (POA) documents are being filed herewith. It is kindly requested that the correspondence address for the present application be updated to reflect the contact information for Seed IP Law Group PLLC (Customer No. 00500).

II. Obviousness-type double patenting and indefiniteness rejections

The present Office Action has rejected claim 18 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 13 of Blair (U.S. Patent No. 6,026,818) n view of Rubin (U.S. Patent No. 6,232,878). With the cancellation of claim 18 herein, it is respectfully submitted that the obviousness-type double patenting rejection is rendered moot.

Claims 34-37 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. With the cancellation of claims 34-37 herein, it is also respectfully submitted that this indefiniteness rejection is also rendered moot.

III. Discussion of the claims in view of the rejections under 35 U.S.C. § 103(a)

Claims 18-20, 23-24, 30, 34, and 36-39 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Blair in view of Rubin. Claims 21, 22, and 31-33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Blair in view of Rubin and further in view of Rochelle (U.S. Patent Application Publication No. 2001/0030610). Claim 35 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Blair in view of Lewiner (U.S. Patent No. 4,893,118).

With the cancellation of claims 18-24 and 30-39, these rejections are rendered moot. For the reasons set forth below, it is respectfully submitted that new claims 40-61 are allowable over these cited references.

A. Independent claim 40

Independent claim 40 recites, *inter alia*, that the at least one return signal is "un-modulated" is generated in response to energization by said varying wideband interrogation signal, and that the second electronic circuit is adapted to determine whether the tag element is present in said work area "from said at least one un-modulated return signal." It is respectfully submitted that these limitations are not met by the cited references.

For example, page 5 of the present Office Action admitted that Blair fails to disclose "a varying interrogation signal." To supply the missing teachings of Blair, the present Office Action has cited Rubin.

However, the signal provided by Rubin's tag in response to his alternating interrogation signal is modulated. Accordingly, Rubin has to provide a demodulator 19 in order to properly detect and process the modulated signal from his tag.

Accordingly, Rubin cannot meet the limitations of claim 40 that require a varying wideband interrogation signal to energize a tag element to enable the tag element to generate at least one un-modulated return signal in response to energization by said varying wideband interrogation signal.

Furthermore, and as will be discussed more fully below with respect to column column 7, line 6 to column 8, line 27 of Rubin, Rubin has to perform a process of demodulation, envelope response generation, and processing of peaks and zero crossings of the envelope response in order to determine whether the tag is a reject tag or a good tag. This processing (demodulation of a modulated signal etc.) of Rubin does not meet the limitations of claim 40 that require "determine whether said tag element is present in said work area from said at least one un-modulated return signal." In other words, Rubin does not determine presence of a tag from an un-modulated return signal and further he needs to perform additional processing to determine whether or not the received signal is indicative of a good or reject tag.

Hence, claim 40 is allowable over Rubin.

B. Independent claim 44

Independent claim 44 recites, *inter alia*, "a varying wideband interrogation signal." Page 5 of the present Office Action admitted that Blair fails to disclose "a varying interrogation signal." To supply the missing teachings of Blair, the present Office Action has cited Rubin.

However, it is respectfully submitted that Rubin does not cure the deficiencies of Blair. More particularly, claim 44 further recites, *inter alia*, that the varying wideband interrogation signal has a plurality of pulses that "additively build energy in said tag element to enable said tag element to generate at least one return signal that is an image of a resonance decay of said additively built energy of said tag element," and recites a second electronic circuit adapted to "determine whether said tag element is present in said work area and to discriminate said at least one return signal from noise, based on a magnitude of said resonance decay that commences after turn-off of at least one of said pulses." It is respectfully submitted that Rubin does not disclose, teach, or suggest these limitations.

Specifically, Rubin provides a device that needs to perform a demodulation with a demodulator 19 and signal processing with a signal processor 20, in order to determine whether or not the frequency pattern of the signal from the tag matches stored frequency patterns. Rubin describes the following in his column 7, line 6 to column 8, line 27:

> "In the first preferred embodiment, the voltage across the antenna 16 is applied to a receiver 18 comprising a demodulator 19 and a signal processor 20. Preferably, the demodulator 19 comprises a post-amplifier and an envelope detector (not shown) of types well known to those in the art. The post amplifier, connected to the antenna 16, amplifies the voltage across the antenna 16 to a voltage level suitable for application to the envelope detector. As shown in FIG. 2, when the voltage applied to the antenna 16 is swept from the lowest to the highest frequency and a

> security tag 14 having a resonant frequency within the sweep interval is within the measurement zone, the voltage at the output of the envelope detector is a characteristic 'S' shaped response curve having positive and negative peaks a, b and a point of zero crossing c. In the preferred embodiment, the positive and negative peaks a, b are indicative of the 3 DB down points of the resonance characteristic of the tag 14 under test and the point of zero crossing c, is indicative of the center frequency of the resonance of the tag 14 …
>
> In use, the test system 10 is situated proximate to an automatic security tag 14 testing system in which resonant security tags 14 are rapidly moved past the antenna 16 in synchronization with the repetition interval of the electric current applied to the antenna 16. The signal processor 20 stores the envelope detector output signal for each repetition interval in the random access memory and correlates the envelope detector output signal with each respective tag 14. The processor 20 then determines the envelope detector output signal peak-to-peak amplitude, the frequencies of the positive going peak and the negative going peaks and the frequency where the signal intersects abscissa. The aforementioned information is used to estimate electrical characteristics such as the 'Q' and resonant frequency of each tag 14. Preferably, the electrical characteristics are transmitted to an attached personal or other computer for segregating reject tags 14 from good tags 14 and for display of the measurement data to the automatic test system operator."

From the above-cited passage of Rubin, it is abundantly clear that the envelope detector of his demodulator 19 has to produce a response curve that has positive (a) and negative (b) peaks, and zero crossings (c) indicative of the center frequency of the tag. His signal processor 20 then has to examine these characteristics of the envelope to determine the "Q" and "resonant frequency" of the detected tag, so as to determine whether that particular tag is a

"reject tag" or a "good tag." In short, Rubin has to first generate the response curve and then examine the a, b, c, points of the response curve in order to differentiate one tag from another.

Figure 2 of Rubin further shows the output response curve from his demodulator 19. As evident from this response curve and from Rubin's description, the a and b points are 3 dB points that do not occur until 3 milliseconds have passed from the start of his frequency sweep. This response curve is further silent or do not otherwise provide any indication as to when the particular pulses turned off.

In contrast, claim 44 requires the second electronic circuit to determine whether the tag element is present in the work area "based on a magnitude of said resonance decay that commences after turn-off of at least one of said pulses." An example of this feature can be seen in Figures 7B-7C and described in paragraph [0067] of the present application, wherein the stored energy in the tag is released (at a peak magnitude) after turn-off of the pulse and so the tag signal can be seen earlier in the decay.

Rubin is completely silent as to the determination of whether a tag is present, based on "a magnitude of said resonance decay that commences after turn-off of at least one of said pulses." Instead and as explained above, Rubin has to perform demodulation, envelope detection/generation, and processing of peaks (a and b) and zero crossings (c) to determine Q and resonant frequency of the detected tag. Further, there is nothing disclosed, taught, or suggested by Rubin that his peaks (a and b) commence after pulse turn-off and/or are used as a basis to determine tag presence and to discriminate from noise as recited in claim 44.

Accordingly, claim 44 is allowable.

C. Independent claim 52

Independent claim 52 recites, *inter alia*, a second electronic circuit adapted to "determine whether said tag element is present in said work area by use of a detected magnitude, that is above a noise level and that commences after turn-off of said at least one pulse, of said resonance decay." Rubin does not disclose, teach, or suggest determination of a tag element's presence by use of a detected magnitude that "commences after turn-off of said at least one pulse."

Accordingly, claim 52 is allowable.

D. Dependent claim 49

Dependent claim 49 recites "wherein said transmit/receive antenna includes three mutually orthogonal rings, each adapted to individually transmit said varying wideband interrogation signal in round-robin succession in respective coordinate directions and each adapted to receive said at least one return signal, wherein transmit and receive cycles of each ring are clocked so as to avoid overlap with transmit and receive cycles of others of said rings."

The present Office Action has cited paragraph [0052] of Rochelle. However, this disclosure of Rochelle does not meet the limitations of claim 44 due to several reasons. First, claim 49 specifies that each ring is adapted to both "transmit" and "receive." The antenna configuration disclosed in paragraph [0052] of Rochelle only performs transmitting ("transmitter 3-axis orthogonal antenna").

Second, claim 49 requires individual transmission "in round-robin succession." In contrast, paragraph [0052] of Rochelle states that "the magnetic field power components simultaneously broadcasts from each of the antenna elements."

Claim 49 further requires that the rings be clocked "so as to avoid overlap with transmit and receive cycles of others of said rings." Rochelle cannot meet these limitations because his antenna does not receive (and so therefore has no receive cycle) and because he transmits simultaneously (which means that his transmit cycles overlap).

Accordingly, claim 49 is allowable.

E. Dependent claim 57

Dependent claim 57 recites "wherein said transmit/receive antenna includes three mutually orthogonal rings, each adapted to individually transmit said varying wideband interrogation signal in successive round-robin in respective coordinate directions and each adapted to receive said at least one return signal, wherein transmit and receive cycles of each ring are clocked so as to avoid overlap with transmit and receive cycles of others of said rings."

Rochelle's simultaneously transmitting antenna cannot and does not meet these limitations. Hence, claim 57 is allowable.

F. Dependent claim 43

Dependent claim 43 recites "wherein said transmit/receive antenna includes three mutually orthogonal rings, each adapted to individually transmit said varying wideband interrogation signal in round-robin succession in respective coordinate directions and each adapted to receive said at least one return signal, wherein transmit and receive cycles of each ring are clocked so as to avoid overlap with transmit and receive cycles of others of said rings."

Rochelle's simultaneously transmitting antenna does not meet these limitations. Hence, claim 43 is allowable.

IV. Conclusion

Overall, the cited references do not singly, or in any motivated combination, teach or suggest the claimed features of the embodiments recited in the pending independent claims, and thus such claims are allowable. Because the remaining claims depend from said allowable independent claims, and also because these dependent claims include additional limitations, such dependent claims are likewise allowable. If the undersigned attorney (Dennis M. de Guzman) has overlooked a relevant teaching in any of the references, the Examiner is requested to point out specifically where such teaching may be found.

In light of the above amendments and remarks, it is respectfully submitted that all pending claims are allowable. Therefore, it is respectfully requested that the Examiner reconsider this application and timely allow all pending claims. The Examiner is encouraged to contact Mr. de Guzman by telephone to discuss the above and any other distinctions between the claims and the applied references, if desired. If the Examiner notes any informalities in the claims, he is encouraged to contact Mr. de Guzman by telephone to expediently correct such informalities.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are believed to be allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC

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